

List of All Chemicals

P *Leptospermum scoparium* (Myrtaceae)

Common name(s)

Manuka; Broom Teatree

How used

Medicinal

*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

Chemical	Plant Part	Low PPM	High PPM	StdDev	*Reference
(-)BICYCLOSESQUIPHELLANDRENE	Essential Oil	--	--		*
(-)CADINA-1(6),4-DIENE	Essential Oil	--	--		*
(-)CADINA-3,5-DIENE	Essential Oil	--	--		*
(-)TRANS-CALAMENENE	Essential Oil	--	--		*
(-)ZONARENE	Essential Oil	--	--		*
2'-BETA-DIHYDROXY-3'-METHYL-4',6'-DIMETHOXYCHALCONE	Shoot	--	--		*
2,5-DIHYDROXY-7-METHOXY-6,8-DIMETHYLFOLAN-3-ONE	Leaf	--	--		*
3'-O-METHYL-3,4-METHYLENEDIOXY-ELLAGIC ACID	Bark	--	--		Lowry, J. B. 1968. The Distribution and Potential Taxonomic Value of Alkylated Ellagic Acids. <i>Phytochemistry</i> 7 10: 1803-1813
3,3',4-TRI-O-METHYL-ELLAGIC-ACID	Bark	--	--		Lowry, J. B. 1968. The Distribution and Potential Taxonomic Value of Alkylated Ellagic Acids. <i>Phytochemistry</i> 7 10: 1803-1813
Activities (3)					
Aldose-Reductase-Inhibitor IC50=0.08 uM	Terashima, S., Shimizu, M., Nakayama, H., Ishikura, M., et al. 1990. Studies on Aldose Reductase Inhibitors from Medicinal Plant of 'Sinfito,' Potentilla canadensis, and Further Synthesis of Their Related Compounds. <i>Chem. Pharm. Bull.</i> 38(10):2733-2736, 1990				
Antihemorrhagic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.				
Cytotoxic ED50(KB)=7.7 ug/ml					
3,3'-DI-O-METHYL-ELLAGIC-ACID	Bark	--	--		Lowry, J. B. 1968. The Distribution and Potential Taxonomic Value of Alkylated Ellagic Acids. <i>Phytochemistry</i> 7 10: 1803-1813
3,4,5-TRIMETHOXYBENZOIC-ACID	Hl	--	--		*
3,4,5-TRIMETHOXYBENZOIC-ACID-METHYL-ESTER	Hl	--	--		*
3-BETA-30-DIHYDROXYLUP-20(29)-EN-28-OIC-ACID	Shoot	--	1.0		*
3-BETA-O-CIS-P-COUMAROYL-MASLINIC-ACID	Leaf	--	14.0		*
3-BETA-O-TRANS-P-COUMAROYL-MASLINIC-ACID	Leaf	--	30.0		*
3-O-METHYL-ELLAGIC-ACID	Bark	--	--		Lowry, J. B. 1968. The Distribution and Potential Taxonomic Value of Alkylated Ellagic Acids. <i>Phytochemistry</i> 7 10: 1803-1813
5,7-DIMETHOXY-6-METHYLFLAVANONE	Shoot	--	--		*
5,7-DIMETHOXYFLAVANONE	Shoot	--	--		*
5,7-DIMETHOXYFLAVONE	Shoot	--	--		*
Activities (1)					
Antiinflammatory					

5-HYDROXY-7-METHOXY-6,8-DIMETHYLFLAVAN-3-ONE	Shoot	--	--	*
5-HYDROXY-7-METHOXY-6,8-DIMETHYLFLAVANONE	Shoot	--	--	*
5-HYDROXY-7-METHOXY-6,8-DIMETHYLFLAVONE	Shoot	--	--	*
5-HYDROXY-7-METHOXY-6-METHYLFLAVANONE	Shoot	--	--	*
5-HYDROXY-7-METHOXY-6-METHYLFLAVONE	Shoot	--	--	*
ALLO-AROMADENDRENE	Essential Oil	--	--	*
ALPHA-COPAENE	Essential Oil	--	--	*
ALPHA-CUBEBENE	Essential Oil	--	--	*
ALPHA-GURJUNENE	Essential Oil	--	--	*
ALPHA-HUMULENE	Essential Oil	--	--	*

Activities (2)

Antitumor Zheng, G-Q., Kenney, P.M., and Lam, L.K.T. Sesquiterpenes From Clove (*Eugenia caryophyllata*) As Potential Anticarcinogenic Agents. *Journal of Natural Products* 55(7): 999-1003, 1992.

Perfumery Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

ALPHA-SELINENE	Essential Oil	--	--	*
----------------	---------------	----	----	---

Activities (3)

Antimalarial IC50=>50 ug/ml Rukunga, G. and Simons, A. J. 2006. The Potential of Plants as a Source of Antimalarial Agents - A Review. Africa Herbal Antimalaria Meeting. PlantaPhile Publications, Berlin. 72 pp.

Antiplasmodial IC50=>50 ug/ml Rukunga, G. and Simons, A. J. 2006. The Potential of Plants as a Source of Antimalarial Agents - A Review. Africa Herbal Antimalaria Meeting. PlantaPhile Publications, Berlin. 72 pp.

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

ALPHA-YLANGENE	Essential Oil	--	--	*
----------------	---------------	----	----	---

AROMADENDRENE	Essential Oil	--	--	*
---------------	---------------	----	----	---

Activities (3)

Antiseptic Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

Cancer-Preventive Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Pesticide

BETA-CARYOPHYLLENE	Essential Oil	--	--	*
--------------------	---------------	----	----	---

BETA-SELINENE	Essential Oil	--	--	*
---------------	---------------	----	----	---

Activities (3)

Antimalarial IC50=>50 ug/ml Rukunga, G. and Simons, A. J. 2006. The Potential of Plants as a Source of Antimalarial Agents - A Review. Africa Herbal Antimalaria Meeting. PlantaPhile Publications, Berlin. 72 pp.

Antiplasmodial IC50=>50 ug/ml Rukunga, G. and Simons, A. J. 2006. The Potential of Plants as a Source of Antimalarial Agents - A Review. Africa Herbal Antimalaria Meeting. PlantaPhile Publications, Berlin. 72 pp.

Perfumery Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry

BETA-SITOSTEROL	Shoot	--	--	*
-----------------	-------	----	----	---

Activities (47)

Androgenic

Angiogenic

Anorexic

Antiadrenomic Martindale's 28th

Antiandrogenic Merck 11th Edition

Antiandrogenic Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. *Journal of Ethnopharmacology*, 28: 221-234, 1990.

Anticancer (Breast)	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from <i>Vaccinium myrtillus</i> (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103.
Anticancer (Cervix)	
Anticancer (Lung)	
Antiedemic IC54=320 mg/kg orl	
Antiestrogenic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antifertility	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Antigonadotrophic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Antihyperlipoproteinaemic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antiinflammatory	
Antileukemic	
Antilymphomtic	
Antimutagenic 250 ug/ml	
Antiphidic 2.3 mg mus	Economic & Medicinal Plant Research, 5: 363.
Antioxidant IC44=10 uM	
Antiprogestational	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Antiprostaglandin 30 mg/day/12 wks	
Antiprostatademonic	Merck 11th Edition
Antiprostatic 10-20 mg 3 x/day/orl man	
Antipyretic	Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.
Antitumor (Breast)	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from <i>Vaccinium myrtillus</i> (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103.
Antitumor (Cervix)	
Antitumor (Lung)	
Antiviral	Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> . <i>Plant Science</i> , 75: 161-165, 1991.
Apoptotic	
Artemicide LC50=110 ppm	Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of <i>Melodorum fruticosum</i> . <i>Phytochemistry</i> , 29(5): 1667-1670. 1990.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.
Caspase-8-Inducer	
Estrogenic	
Febrifuge	Neuwinger, H. D. 1996. <i>African Ethnobotany - Poisons and Drugs</i> . Chapman & Hall, New York. 941 pp.
Gonadotrophic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Hepatoprotective	
Hypocholesterolemic 2-6 g/man/day/orl	Martindale's 30th
Hypocholesterolemic 9-3,330 mg/man/day/orl	Martindale's 28th
Hypoglycemic	Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. <i>Journal of Ethnopharmacology</i> , 27: 243-275, 1989.
Hypolipidemic 2-6 g/day	
Pesticide	
Spermicide	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Ubiquiot	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Ulcerogenic 500 mg/kg ipr rat	

BETULINIC-ACID

Bark -- 5000.0 -0.02 *

Activities (22)

Anthelmintic

AntiHIV EC50=2.0 ug/ml

Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. *J. Nat. Prod.*, 61 (9): 1090-1095.

AntiHIV IC50=6.5 ug/ml

AntiHIV 14.8 uM

Antibacterial

Anticancer

Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

Anticarcinomic

Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

Antiedemic

Antiinflammatory

Recio, M., et al. 1994. Investigations on the Steroidal Anti-Inflammatory Activity of Triterpenoids from *Diospyros leucomelas**. *Planta Medica*, 61: 9.

Antileukemic

Antimalarial IC50=19-26 ug/ml

New York Times, 3/28/95.

Antimelanomic

Antinociceptive

Antiplasmodial IC50=19-26

Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Antiviral 14.8 uM				
Apoptotic				
Cytotoxic 50-100 ppm	Biosyn. Prod. Cancer Chemotherapy (Petit et al)			
Cytotoxic 16.4 uM				
Phospholipase-A2-Inhibitor				
Prostaglandin-Synthesis-Inhibitor 200 ug/ml	Dunstan, C. A., Liu, B., Welch, C. J., Perera, P., Bohlin, L. 1998. Alphitol, a Phenolic Substance from <i>Alphitonia zizyphoides</i> which Inhibits Prostaglandin Biosynthesis in vitro. <i>Phytochemistry</i> , 48(3): 495-497.			
Prostaglandin-Synthesis-Inhibitor IC50=101 uM	Huang, C., Tunon, H., Bohlin, L. 1995. Anti-Inflammatory Compounds Isolated from <i>Menyanthes trifoliata</i> L. <i>Yao Hsueh Hsueh Pao</i> , 30(8): 621-626.			
BETULINOL	Shoot	--	--	*
CADINA-1,4-DIENE	Essential Oil	--	--	*
CHRYSIN-DIMETHYL-ETHER	Shoot	--	--	*
COLOSOLIC-ACID	Shoot	--	3.2	*
DELTA-AMORPHENE	Essential Oil	--	--	*
DELTA-CADINENE	Essential Oil	--	--	*
Activities (9)				
Aldose-Reductase-Inhibitor				
Antiacne				
Antibacterial MIC800 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against <i>Streptococcus mutans</i> . <i>J. Agric. Food Chem.</i> 41: 1102-1105.			
Anticariogenic MIC800 ug/ml	Muroi, H. and Kubo, I. 1993. Combination Effects of Antibacterial Compounds in Green Tea Flavor against <i>Streptococcus mutans</i> . <i>J. Agric. Food Chem.</i> 41: 1102-1105.			
Antistreptococcic				
Cytochrome-P450-Inducer				
P450-Inducer				
Pesticide				
Testosterone-Inducer				
DIMETHYLCRYPTOSTROBIN	Shoot	--	--	*
ELLAGIC-ACID	Bark	--	--	Lowry, J. B. 1968. The Distribution and Potential Taxonomic Value of Alkylated Ellagic Acids. <i>Phytochemistry</i> 7 10: 1803-1813
Activities (51)				
ACE-Inhibitor IC50=5 mM/l				
Abortifacient 1.2 mg/kg ivn mus				
Aldose-Reductase-Inhibitor IC50=0.2 uM				
Aldose-Reductase-Inhibitor IC50=0.2 ug/ml (strong activity)				
AntiGTF ID50=20 ug/ml				
AntiHIV IC90=200 ug/ml	Tan, G.T., Pezzuto, J.M., Kinghorn,* A.D., Hughes, S.H. Evaluation Of Natural Products As Inhibitors Of Human Immunodeficiency Virus Type 1 (HIV-1) Reverse Transcriptase. <i>Journal of Natural Products</i> , 54(1): 143-154, 1991.			
Antiaflatoxin				
Antianaphylactic				
Antibacterial 1,250 ug/ml				
Antibacterial ID50=20 ug/ml				
Anticancer (Cervix)	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.			
Anticancer (Colon)	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.			
Anticancer (Esophagus)	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.			
Anticancer (Mouth)	Joseph, J., Nadeau, D. and Underwood, A. 2001. <i>The Color Code</i> . Hyperion, NY.			
Anticariogenic ID50=20 ug/ml				
Anticataract	Shimizu, M., Horie, S., Terashima, S., Ueno, H., et al. 1989. Studies on Aldose Reductase Inhibitors from Natural Products.II. Active Components of a Paraguayan Crude Drug 'Para-parai mi.' <i>Phyllanthus niruri</i> . <i>Chem. Pharm. Bull.</i> 37(9): 2531-2532, 1989.			
Antigingivitic 1,250 ug/ml				
Antihyperthyroid				
Antiinflammatory				
Antimalarial IC50=0.5 uM	Rukunga, G. and Simons, A. J. 2006. The Potential of Plants as a Source of Antimalarial Agents - A Review. <i>Africa Herbal Antimalaria Meeting</i> . PlantaPhile Publications, Berlin. 72 pp.			
Antimutagenic				
Antioxidant >50 x tocopherol	Osawa, T. Phenolic Antioxidants in Dietary Plants as Antimutagens. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.11 p.142.			
Antioxidant IC98=30 ppm				

Antiperiodontic 1,250 ug/ml	
Antiperoxidant IC50=29 uM	Planta Medica, 57: A54, 1991.
Antiplaque 1,250 ug/ml	
Antiplasmodial IC50=0.5 uM	Rukunga, G. and Simons, A. J. 2006. The Potential of Plants as a Source of Antimalarial Agents - A Review. Africa Herbal Antimalaria Meeting. PlantaPhile Publications, Berlin. 72 pp.
Antiseptic 1,250 ug/ml	
Antistreptococcic ID50=20 ug/ml	
Antithyroid	Jim Duke's personal files.
Antitumor	
Antiviral	Economic & Medicinal Plant Research, 5: 224.
Antiyeast IC50=10.5 uM	
Apoptotic	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Astringent	Martindale's 29th
Cancer-Preventive 3 ppm	
Candida-SAP-Inhibitor IC50=8.4 uM	
Cytotoxic 4.6 ug/ml	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 359.
Deiodinase-Inhibitor	Jim Duke's personal files.
Detoxicant	
Glucosyl-Transferase-Inhibitor ID50=20 ug/ml	
HIV-RT-Inhibitor	Economic & Medicinal Plant Research, 5: 224.
Hemostatic	Merck 11th Edition
Hepatoprotective IC55=30 ug/ml	Mayumi Ito (nee Someya), et al. 1990. Hepatoprotective Compounds from Canarium album and Euphorbia nematocypha. Chem. Pharm. Bull. 38(8): 2201-2203, 1990.
Juvabional	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Pesticide	
Quinone-Reductase-Inducer 0.4 g/kg rat	Ahn, D., Putt, D., Kresty, L., Stoner, G. D., Fromm, D., Hollenberg, P. F. 1996. The Effects of Dietary Ellagic Acid on Rat Hepatic and Esophageal Mucosal Cytochromes P450 and Phase II Enzymes. Carcinogenesis, 17(4): 821-828.
Sunscreen 0.50%	Jim Duke's personal files.
Topoisomerase-I-Antagonist	Journal of Medicinal Food 2: 167.1999.
Xanthine-Oxidase-Inhibitor IC50=3.1 uM	Hatano, T., Yasuhara, T., Yoshihara, R., Agata, I., Noro, T., and Okuda, T. 1989. Effects of Interaction of Tannins with Co-existing Substances.VII. Inhibitory Effects of Tannins Related Polyphenols on Xanthine Oxidase. Chem. Pharm. Bull. 38(5): 1224-1229

FLAVANONE-5,7-DIMETHOXY-6-METHYLFLAVONE

Shoot -- -- *

JACOUMARIC-ACID

Leaf -- 40.0 *

PINOSTROBIN

Shoot -- -- *

Activities (6)

Antiinflammatory

Aromatase-Inhibitor IC52=1 uM/Journal of Medicinal Food 2: 235.1999.

COX-1-Inhibitor IC36=100 ug/ml

COX-2-Inhibitor IC7=100 ug/ml

Fungicide 2.5 mM

Geibel, M. 1994. Sensitivity of the Fungus Cytospora persoonii to the Flavonoids of Prunus cerasus. Phytochemistry. 38(3): 599-601. 1995.

Pesticide

PLATANIC-ACID

Shoot -- 0.6 *

STROBOCHRYNS-DIMETHYL-ETHER

Shoot -- -- *

STROBOPININ

Shoot -- -- *

STROBOPININ-7-METHYL-ETHER

Shoot -- -- *

SYRINGIC-ACID-METHYL-ESTER

HI -- -- *

UVAOL

Shoot -- -- *

Activities (6)

Antioxidant IC47=10 uM

Antiproliferative IC50=30->30 uM

Antitumor (Breast) IC50=30->30 uM

Antitumor (Stomach) IC50=30->30 uM

Cytotoxic 100-200 ppm

Lipoxygenase-Inhibitor